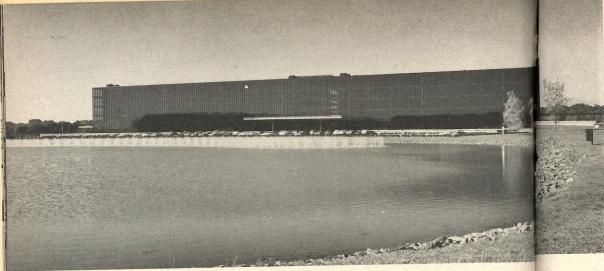




BELL LABS' MIRRORED SUPERBLOCK

Saarinen's design for an engineering lab in New Jersey
features a six-story reflecting wall 700 ft long
and a balconied reception court five stories high



Joseph W. Molitor, chairman

Development Center, Bell Telephone Laboratories,
Holmdel, N. J.

ARCHITECT: *Eero Saarinen and Associates*

LANDSCAPE ARCHITECTS:

Sasaki, Walker and Associates

STRUCTURAL ENGINEERS:

Severud-Elstad-Krueger Associates

ELECTRICAL AND MECHANICAL ENGINEERS:

Jarosz, Baym and Bolles

Deaton, Dechman Associates

U.S. DEPARTMENT OF AGRICULTURE

ACOUSTICAL CONSULTANTS:
C. H. Bessie and Newman, Inc.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

GENERAL CONTRACTOR:
 J. B. Jones Construction Co.

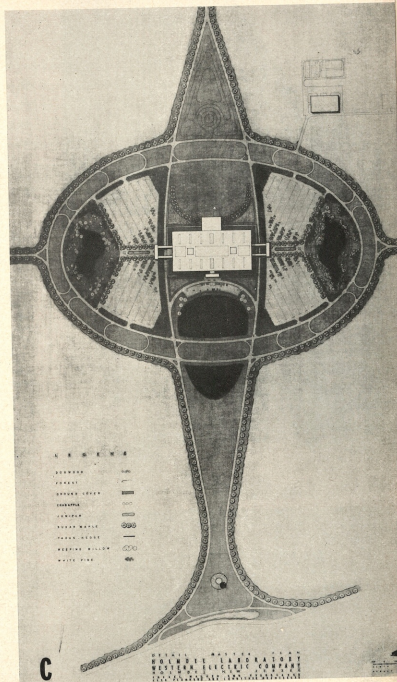
DR. BRUCE CONRADSON CO.

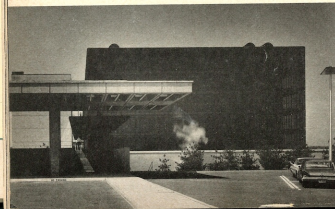
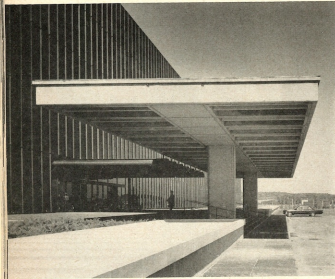
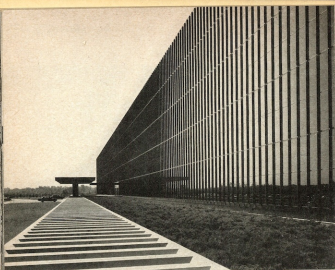
OVER-ALL ENGINEERING AND
CONSTRUCTION DIRECTION: *Western Electric Co*

In many locations a wall of mirrored glass five stories high and 700 ft long would be an architectural disaster. But in the gently rolling openness of the South Jersey terrain—tree-dotted, but not densely wooded—as is New England—the new Bell Telephone Laboratories Engineering Development Center, when finally glazed with reflecting glass, will have just the right amount of glitter to give it great style and elegance. Its precise, hard, shiny surfaces—and its rectilinearity—will make effective contrast with the soft curves and dips and rises of the countryside. Its character—akin to the machine-perfect products its users will develop—will be peculiarly appropriate.

As is the case in producing many new products, manufacturing difficulties were encountered here in pioneering with a low-brightness reflective glass. As a result, one wall was glazed with an experimental product (see page 149) and the remainder with gray heat-resisting glass, so the building could be used. It appears a satisfactory laminate mirror glass will soon be available to replace the substitute gray glass.

The plot plan at right shows the final building scheme, of which one half is now completed. The 460-acre site is approached from a highway lying to the north, or bottom, of the plan. The largest of the four lots—sixty acres, 6,000,000 gals—is directly in front of the building, serves for condenser spray cooling and as a firefighting reserve. Each of the one-way, elliptical rings carries traffic in opposite directions, neatly sorting motorists by destination. Thanks to overhead bridges, pedestrians never need cross a road. Trucks and auto traffic are separated





and the building will then assume the look the architect intended.

Of the spirit of the design, architect Eero Saarinen said, "Its material and its structure should be appropriate to the advanced technology of our time. The building should appear as a glass pavilion on the central axis of a park-like garden, comprising the driveway and a reflecting lagoon."

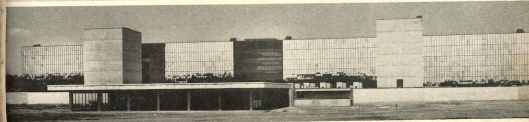
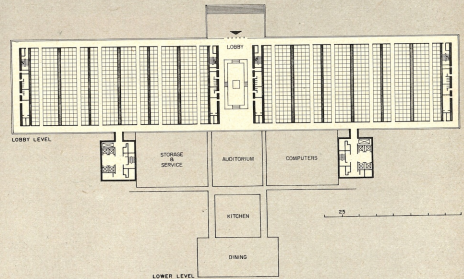
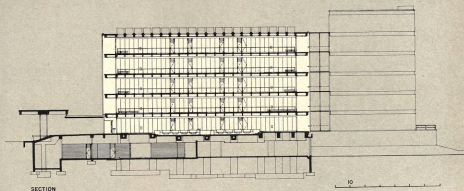
Of the plan, Saarinen said, "After much study, we arrived at a radically new plan, based on the idea of putting all labs and offices in interior space at short, cross-block corridors, with the entire glass periphery free for main corridors.

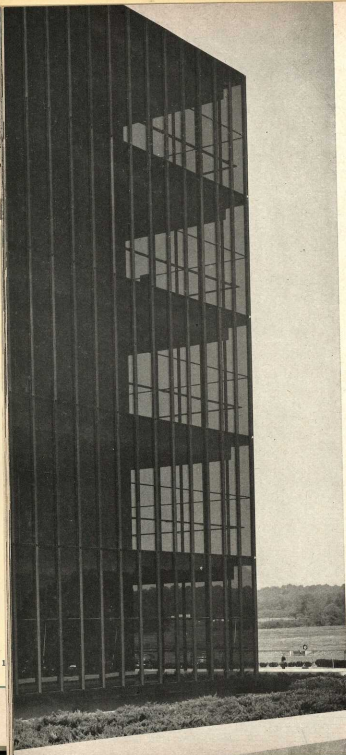
"In its final stage, the building will consist of four long-span blocks, separated by a cross-shaped space with interior garden courts, all under one roof. The plan of each of the four units can be thought of as the gridiron of a football field, with corridors running around the outside of the rectangle.

"The advantages of this plan are many. Flexibility is at a maximum. Each of the cross-building cores is the width of seven 6-ft modules. The entire core can be used as an open area—such as drafting or typing pool—or split into 18-, 24-, or 12-ft-wide areas. Services supplied to the lab blocks are kept to a minimum in office areas, but they can be quickly converted to lab use by adding services through the vertical risers from the source.

"The plan provides privacy for individuals in their offices and yields a controlled environment with air conditioning and modern lighting, efficient and flexible storage-wall space and, particularly important in the lab, unlimited flexibility in arrangement of furniture and equipment.

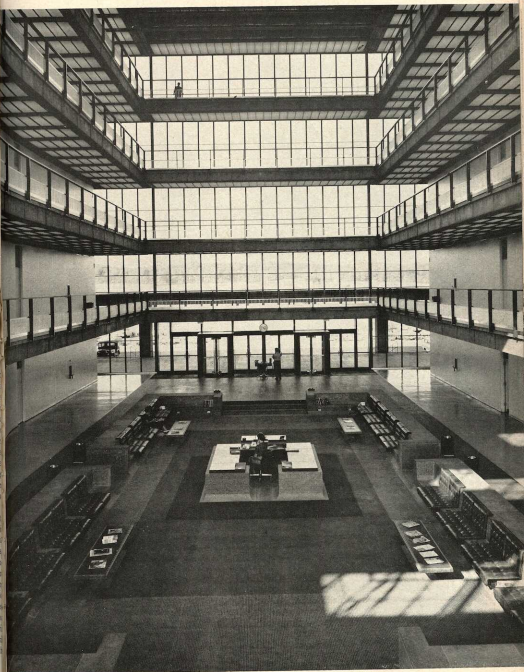
"The scheme also assures short, private corridors with minimum distur-

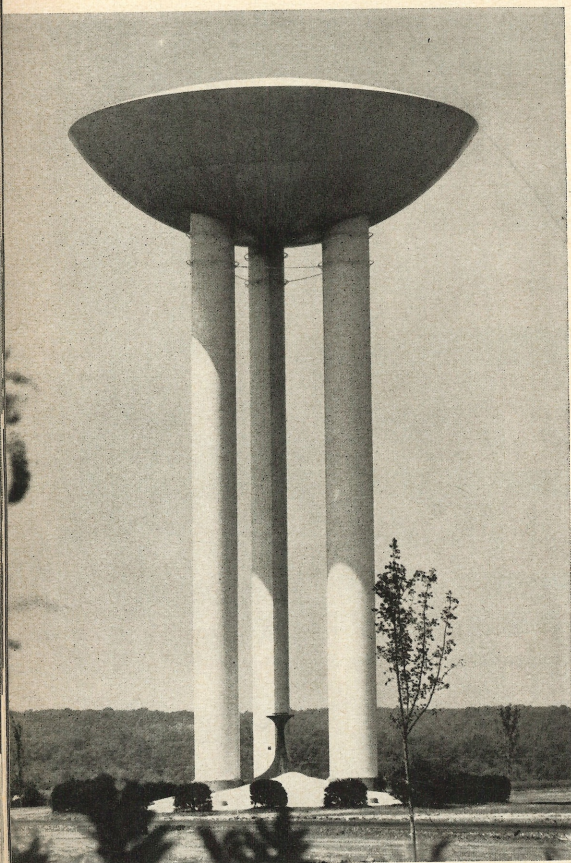




ance, since major traffic is relegated to periphery corridors, which permit taking full advantage of the country side. Emerging from concentration in lab office, the individual will come upon a sweeping view of the countryside of the formal planting of the winter garden interior court, and feel refreshed by his encounter with nature. The corridor walk becomes an exciting one at the points where the corridors become balconies in the reception court."

The vast, balconied reception court, which rises through five floors and is roofed by a skylight, cuts from front to back of the building to create a dramatic focus for the entire interior of the structure. In the final stage, an employee's lounge in the other building block will create its counterpart. Between them, the five-story-high winter garden court will become the new focus of the entire complex. Its planting will be formal in character, and it will contain orange trees, growing from giant concrete planting boxes.





At the highway entrance and on axis with the building, a graceful water tower, holding 300,000 gals, rises 127 ft above grade. Saarinen says of its design, "A water tower should not be hidden away; it is a necessary functional thing, but can also be a proud and beautiful vertical accent, like a piece of sculpture." The tank, 72 ft in diameter, is illuminated by projected light from the center of its base, which provides a graded wash on the bowl-shaped upper element.

One of the building's facilities—in addition to auditorium, transcription service, restaurant, medical department, computer center, etc.—is a technical library (photo below) with a present capacity of 14,000 volumes and 500 periodicals. It and the other common service elements will serve a working population of 4,500 employees

